OBLON, SPIVAK, ET AL
DOCKET #: 219465US2
INV: Hiroaki MUKAI, et al.
SHEET 1 OF 7

2017-20-2262017

FIG.1

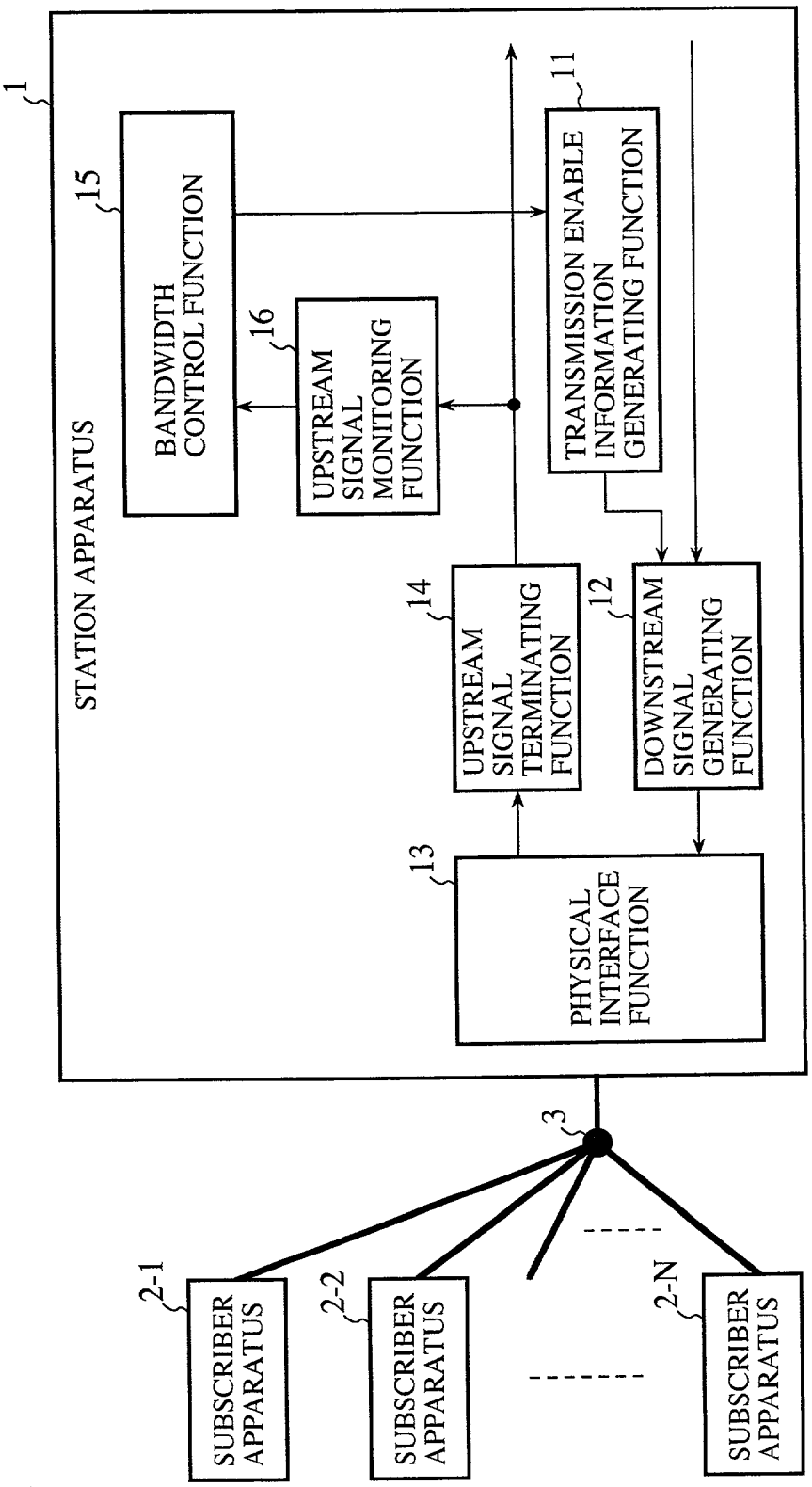


FIG.2

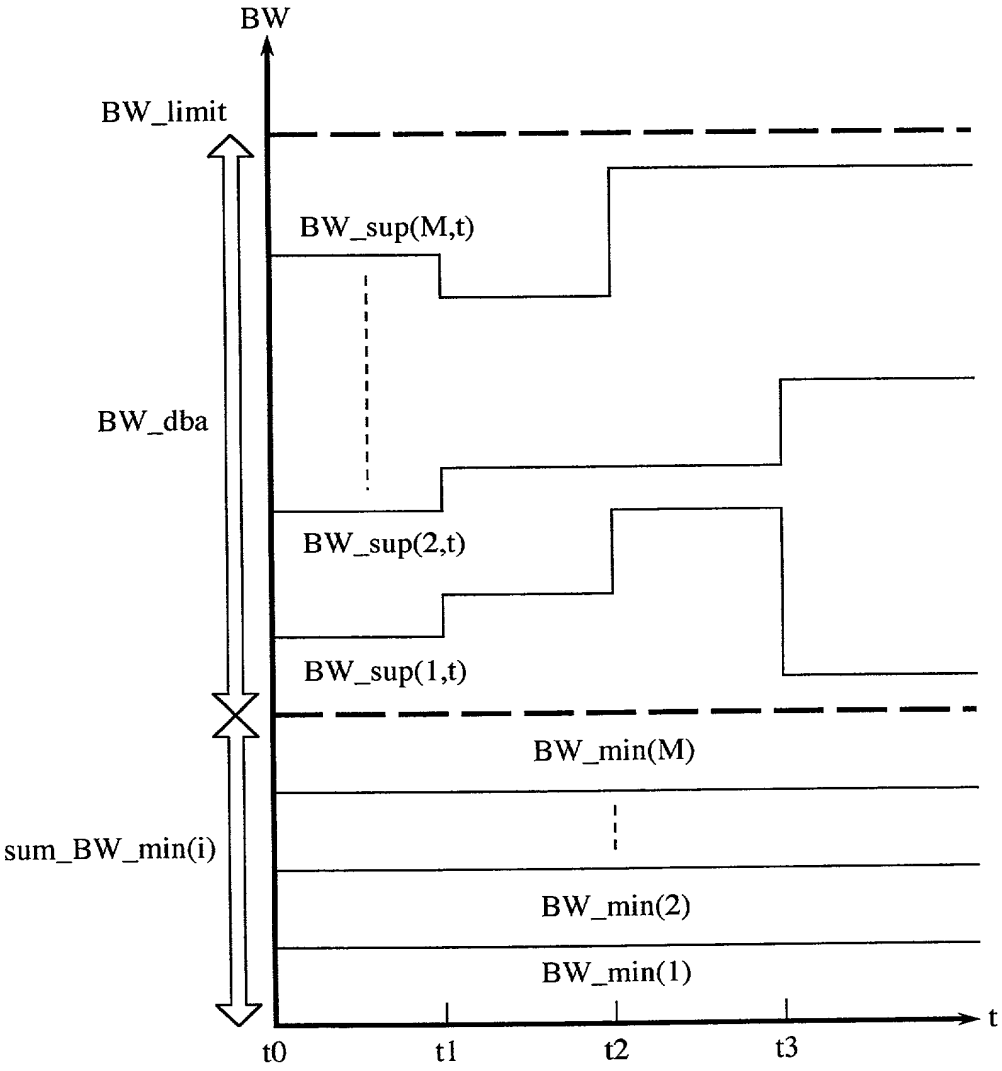

BW
BW_limit
BW_sup(M,t)
BW_dba
BW_sup(2,t)
BW_sup(1,t)
BW_min(M)
sum_BW_min(i)
BW_min(2)
BW_min(1)
t
t0
t1
t2
t3

FIG.3

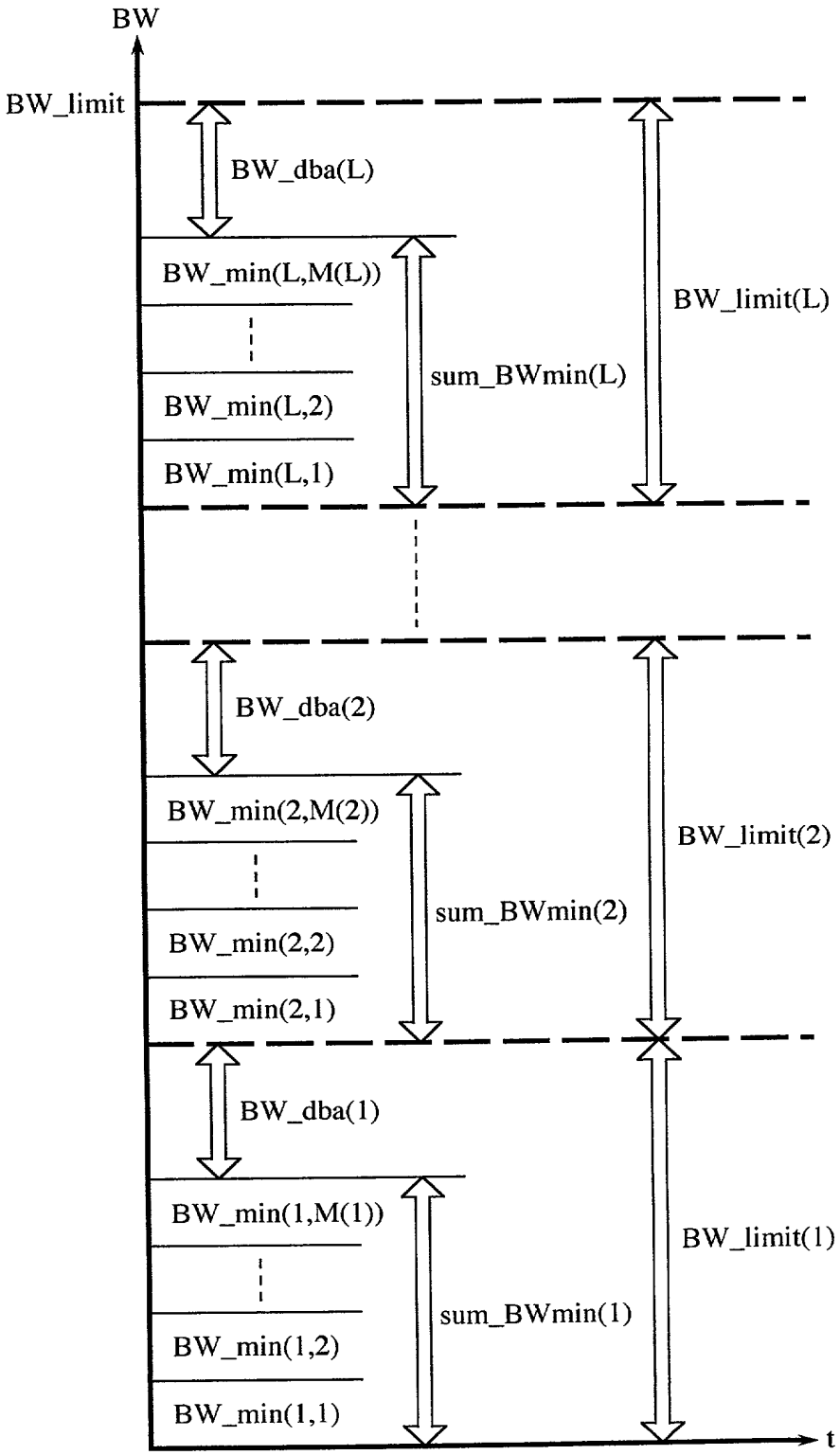

BW
BW_limit
BW_dba(L)
BW_min(L,M(L))
BW_min(L,2)
BW_min(L,1)
sum_BWmin(L)
BW_limit(L)
BW_dba(2)
BW_min(2,M(2))
BW_min(2,2)
BW_min(2,1)
sum_BWmin(2)
BW_limit(2)
BW_dba(1)
BW_min(1,M(1))
BW_min(1,2)
BW_min(1,1)
sum_BWmin(1)
BW_limit(1)
t

FIG.4

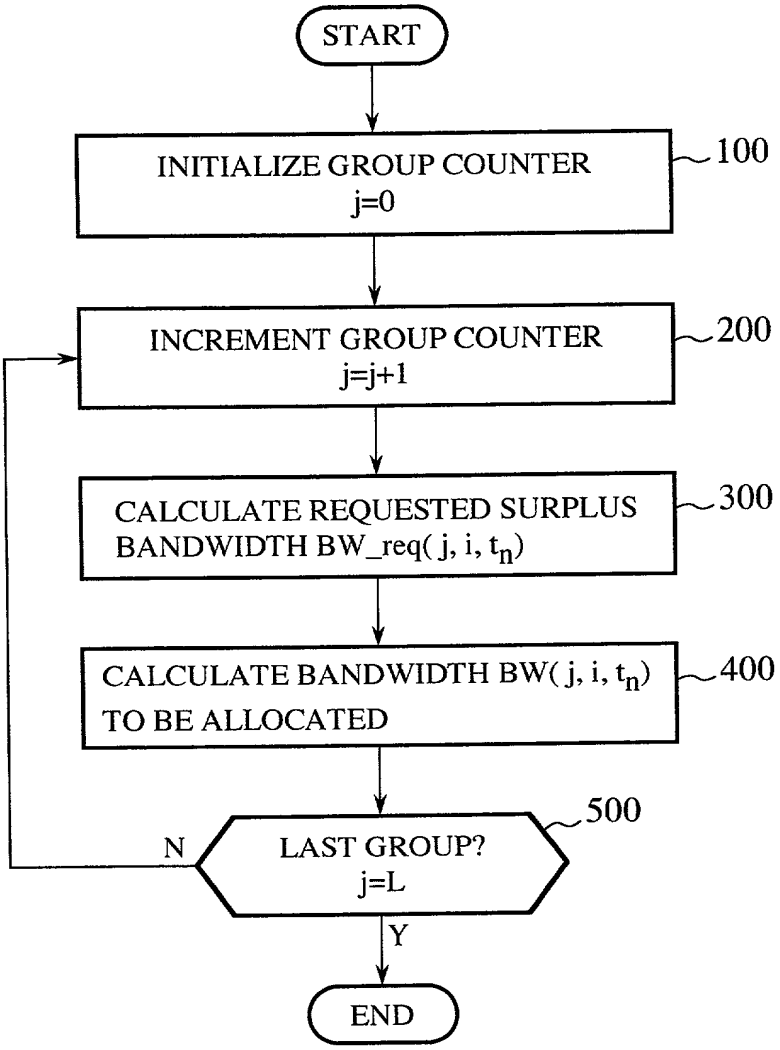

START
INITIALIZE GROUP COUNTER
j=0
100
INCREMENT GROUP COUNTER
j=j+1
200
CALCULATE REQUESTED SURPLUS BANDWIDTH BW_req(j, i, t_n)
300
CALCULATE BANDWIDTH BW(j, i, t_n) TO BE ALLOCATED
400
LAST GROUP?
j=L
500
N
Y
END

FIG.5

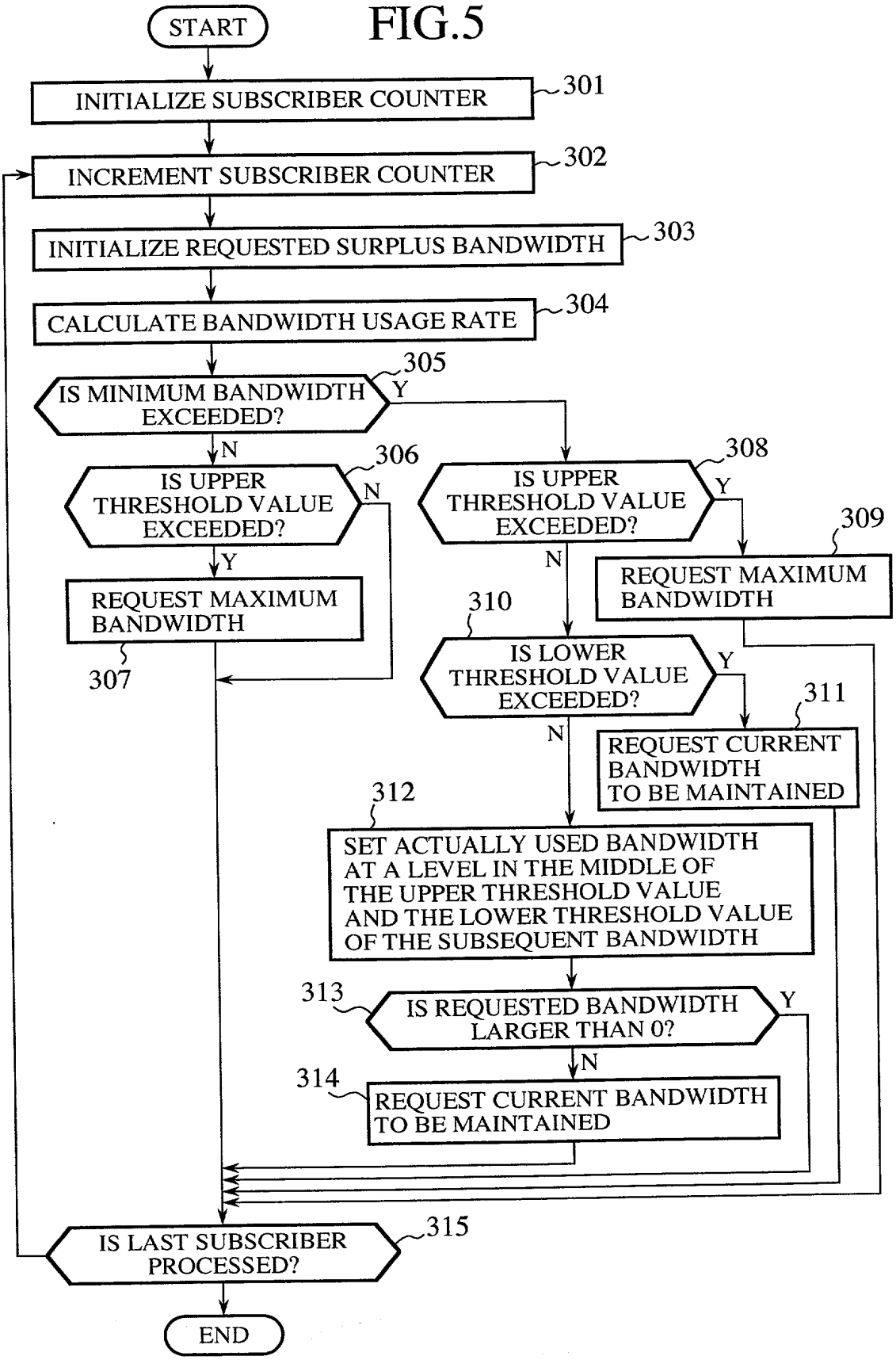
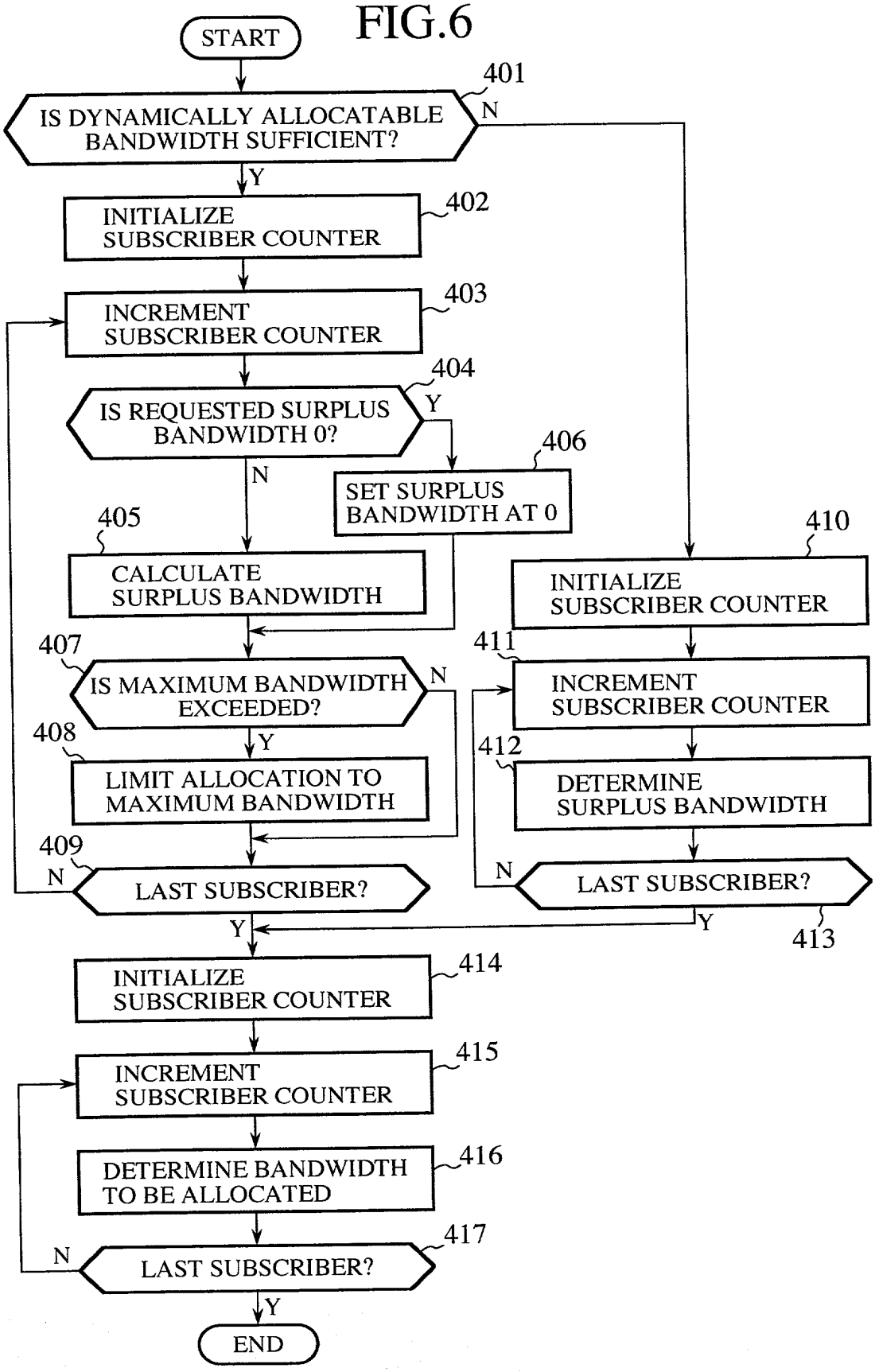

START
INITIALIZE SUBSCRIBER COUNTER
301
INCREMENT SUBSCRIBER COUNTER
302
INITIALIZE REQUESTED SURPLUS BANDWIDTH
303
CALCULATE BANDWIDTH USAGE RATE
304
IS MINIMUM BANDWIDTH EXCEEDED?
305
Y
N
IS UPPER THRESHOLD VALUE EXCEEDED?
306
N
Y
REQUEST MAXIMUM BANDWIDTH
307
IS UPPER THRESHOLD VALUE EXCEEDED?
308
Y
N
REQUEST MAXIMUM BANDWIDTH
309
IS LOWER THRESHOLD VALUE EXCEEDED?
310
Y
N
REQUEST CURRENT BANDWIDTH TO BE MAINTAINED
311
SET ACTUALLY USED BANDWIDTH AT A LEVEL IN THE MIDDLE OF THE UPPER THRESHOLD VALUE AND THE LOWER THRESHOLD VALUE OF THE SUBSEQUENT BANDWIDTH
312
IS REQUESTED BANDWIDTH LARGER THAN 0?
313
Y
N
REQUEST CURRENT BANDWIDTH TO BE MAINTAINED
314
IS LAST SUBSCRIBER PROCESSED?
315
END

FIG.6


START
401
IS DYNAMICALLY ALLOCATABLE BANDWIDTH SUFFICIENT?
N
Y
402
INITIALIZE SUBSCRIBER COUNTER
403
INCREMENT SUBSCRIBER COUNTER
404
IS REQUESTED SURPLUS BANDWIDTH 0?
Y
406
SET SURPLUS BANDWIDTH AT 0
N
405
CALCULATE SURPLUS BANDWIDTH
407
IS MAXIMUM BANDWIDTH EXCEEDED?
N
Y
408
LIMIT ALLOCATION TO MAXIMUM BANDWIDTH
409
N
LAST SUBSCRIBER?
Y
410
INITIALIZE SUBSCRIBER COUNTER
411
INCREMENT SUBSCRIBER COUNTER
412
DETERMINE SURPLUS BANDWIDTH
N
LAST SUBSCRIBER?
Y
413
414
INITIALIZE SUBSCRIBER COUNTER
415
INCREMENT SUBSCRIBER COUNTER
416
DETERMINE BANDWIDTH TO BE ALLOCATED
417
N
LAST SUBSCRIBER?
Y
END

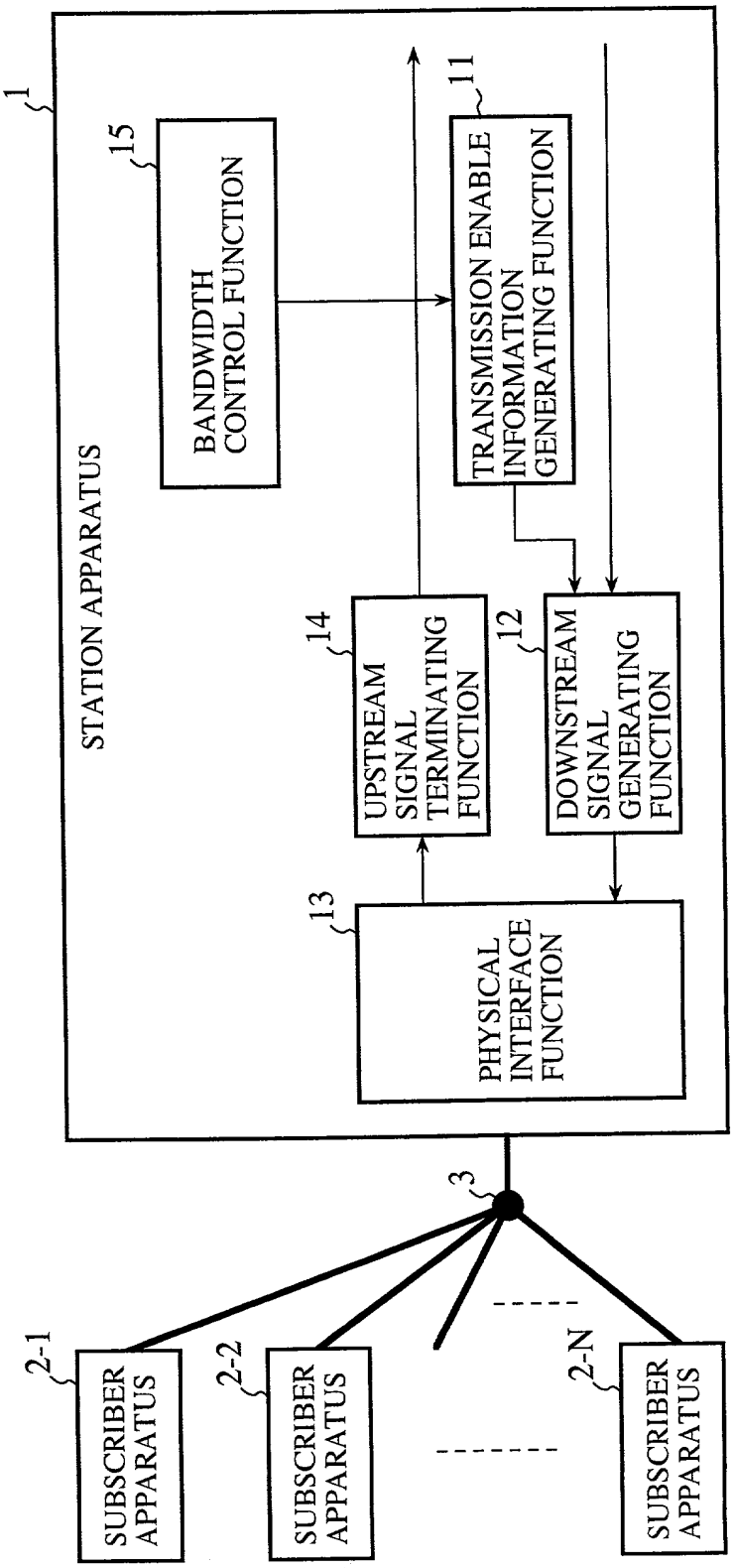



FIG.7 (PRIOR ART)